THE VETERINARY RECORD

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EDITED BY WILLIAM HUNTING, F.R.C.V.S.

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EDITORIAL NOTES.

The first portion of the report of the recent Council Meeting, which we print this week, is almost entirely taken up by a discussion on a matter not mentioned in the notice calling the meeting. This method of conducting business, if not illegal, is decidedly irregular, but by no means unusual at Red Lion Square. During the latter part of last official year this irregularity appeared more than once, but a remarkable instance occurred when some new Regulations for the Matriculation Examination, which had been suggested by a Committee formed for another purpose, were sprung upon the Council without notice, and even before the Committee had sent up any report of their proceedings. If the business of the Council is to be conducted in an orderly manner, it is essential that the matters for its consideration at each meeting should be clearly stated on the agenda paper.

At the quarterly meeting of Council, held in October last, a Committee of gentlemen was elected, on the motion of Sir Henry Simpson, to co-operate with the Royal Agricultural Society and the Worshipful Company of Farriers in forming a scheme for the registration of shoeing-smiths. The three bodies met, and at once formed sub-committees who elaborated the scheme. The working representatives of our profession were Professor Axe, Sir Henry Simpson, and Mr. Hunting. What they did was approved by the Council, and the next step was to form a Registration Committee, consisting of six representatives of each of the three bodies interested. The Worshipful Company of Farriers appointed their representatives as did the Royal Agricultural Society, but from some cause the Royal College of Veterinary Surgeons delayed or neglected to attend to the matter until the Farriers Company wrote to enquire who our representatives were. The President then nominated a committee of six *pro tem.* so as not to delay the work of the joint corporations. The gentlemen temporarily selected by our President included those who had hitherto acted. Those appointed by the Royal Agricultural Society and by the Farriers Company also included the gentlemen who had acted for them. This continuity of appointment was no doubt based upon the principle that it is not good policy "to swap horses in the middle of the stream," and it also implied a recognition of the services of the men whose action had so far been acceptable.

To have removed a man from the committee who had willingly and honestly worked from the commencement and who was willing to continue, was quite within the right of any one of the three responsible bodies and many causes might have rendered such a change desirable. Only *one* possible motive for making a change could be undesirable—a personal motive. To throw a man off the committe simply on account of some petty personal feeling expressed against him by another man is an action of the most objectionable nature, and it will be allowed throughout the profession that if such motive has been definitely expressed and practically acted upon it is a disgrace to the Council. This is simply what the Council has done. They permitted a man to decline action on the committee because another was proposed whom he disliked (one Councilman tersely put the question and was answered affirmatively). They retained the man who gave his personal feeling expression and who had done nothing so far in the matter. They rejected the man who had shared in the initiation and progress of the work up to the present time.

Is this thoughtlessness or ignorance, or is it a disclosure of the feelings and motives which actuate a large section of our Council? Never before have we met with a case in which a representative body acted *pointedly and openly* at the dictation of personal feeling, and we trust that the publicity given to the matter in our report of the proceedings may prevent a repetition of such miserable pettiness.

When the first committee was formed in October to act with the Farriers' Company it was not nominated separately and ballotted for—Sir Henry Simpson proposed it then. When at this last meeting Mr. Barford proposed a similar course an eminent tactitian objected and by the false statement that "all our elections hitherto have been by ballot" succeeded in obtaining secrecy for the election which gave effect to the injured feelings of one man.

The Yorkshire V.M.S., at their meeting on Friday, will have before them again the subject of the Veterinary Benevolent and Defence Society. A calm discussion is certain to do good. Two rival societies are unadvisable—*vis unita fortior*. If the old Society be willing to yield to the suggestions which have been made, especially to reduce their entrance fees, we ought all to support it. The peculiar system of compromise or settlement to which, a short time since, the managers seemed fanatically attached has been dropped, and actions are now boldly faced by the executive body. Quite a number of plaintiffs have, by this bolder action, been deterred from dragging practitioners into Court. Of course there are cases which it would be folly and injustice to defend, but to act always on a system of compromise is simply to invite law-suits.

CASES AND ARTICLES.

ON THE CAUSE OF UDDER INFLAMMATION.

By Dr. Bang, Copenhagen.

(Translated by W. Longhurst, M.R.C.V.S., Hull)

(Continued from page 28).

A veterinary surgeon sent me a bottle containing some watery and flaky milk from a cow which for three or four weeks had had inflammation in all the glands. The disease had commenced two days before calving. The general health was undisturbed but there was a deal of swelling of the udder. In this secretion I found only one organism—Strepto-coccus, which mostly formed very long chains, considerably longer than the one in my infectious case, while the separate grains were a little less. In another case of udder inflammation I found a similar long chain of Cocci, but I did not try their infectious properties by grafting. Yet in a third I found a short and a long chain. This cow was affected in three glands; the inflammation not serious, the swelling only small, but the secretion was thin and yellowish with a very faint milky taint and containing many small flakes and slimy clots. The separate grains of this microbe found in this secretion, proved to be a little different in their shape and length to those above mentioned, and it thus must be supposed to be one from a different class. I have proved that a Bacterium which causes a specific disease in other animals causes udder inflammation in the cow, and this has a practical significance as it is a common practice to place horses suffering from strangles in the stable among the cows, and this may be one of the means through which the cows get udder mischief. It is interesting to note that all the Strepto-cocci classes which up to now have been tried as to their capacity for causing udder inflammation, cause a chronic inflammation without a tendency to spontaneous cure; with a small tumour and a secondary atrophy of the gland. In an udder inflammation of a more vehement character than those which I have mentioned I found a Bacterial form which was on the point of turning into a Strepto-coccus. It was what is called a Micro-coccus, (small, nearly circular formed particles) which only rarely formed short chains, but as a rule they—the particles—were laid two and two together, forming what is called a Diplococcus.

An old cow which had calved on the 4th of May continued well until the 6th, when a large tumour formed in the left hind gland, and an alteration in secretion. Next day the cow was very ill and feverish, (tem., 40·3 R.). She took but little food and gave little milk. The gland was the seat of a fair sized hard and tender tumour, and the skin was reddish. The secretion from the diseased gland was pretty plentiful, thin and watery having a port wine colour, and containing some large slimy and jellyfied lumps. That day I found in the secretion a great number of short chains, but the next day there were only a few with three or four links in a chain, otherwise a middling quantity of Diplococci and Micrococci, which lay together in masses. This cow had also a slight inflammation of the womb, and in the discharge from the vulva I found several forms of Bacteria, but mostly Diplococci. The following days the cow grew better, the fever diminished, and soon left altogether, the swelling of the udder was perceptibly less, but remained hard, the secretion was less red in shade, but continued watery with several white lumps in it.

On May 31st there was found in the swollen gland a defined painful lump, which gradually turned into a very large abscess, and later on, more abscesses formed in different places of the gland. These were all emptied through lancing, and gradually closed themselves, except the first one, from which on the 13th of September, a large piece of gland tissue—grey and yellowish—protruded. This was removed by hand, after which the wound soon closed and the cow gradually got well, but was left three teated. The inflammation had in this case taken the somewhat rare course of destroying—necrosis—the affected gland. A mouse was inoculated with the secretion from this diseased gland and died two days after, and in its blood, spleen and the matter from the place of inoculation I found the Diplococcus above mentioned. In the cultivation on Agar-agar, the Microbe grew just in the same way as the Strepto-coccus, that is to say, as a slight grainy line along side the cultivation channel, but without perceptible growth on the surface. A third group was formed of two cases; in the secretion from these I found an organism which was generally placed like a Diplo-coccus, but it was also, sometimes found in quantities of different size and shape. It very much resembled the microbe from the previous case, in shape, but its growth was very different, and by this it must be called a Staphylo-coccus.

I received the secretion from a young cow belonging to a stable where udder inflammation often occurred. She had calved in the spring and then gave milk freely. Later, a narrowing formed, which was cut, in the middle of a teat; after this occurred an inflammation in the gland, which caused the organ to shrivel and harden. Later on, an inflammation arose in another gland, which was also somewhat severe, but not quite so bad as the first one. In the secretion from the first attacked gland I found Cocci of different sorts also a fine Bacillus. The secretion from the second attacked gland was a milky coloured watery fluid with large lumps. In this I found only a Diplococcus. Cultivation of this organism in Agar-agar did not show growth along the cultivation channel alone, but also on the top, and this part soon took a browny yellowish colour. The cultivation was pure, *i.e.* contained only one Bacterial form.

I received a very large udder of a cow 11 years old, which had been fed for killing; five weeks before it had to be killed a swelling took place in all four glands, one of these was barren, but from the other three ordinary milk was derived until fourteen days before killing, after this the secretion altered; it

delivered a live calf three days before killing. In the secretion I found a lot of Cocci, some in short chains—I isolated a Micro-coccus which in appearance and growth greatly resembled one of the ordinary Cocci causing suppuration—*Staphylococcus pyogenes albus*.

I will now mention a few cases in which the microbe was a Bacillus, that is to say a long thin body. On the 6th of June a cow stabled here, was attacked severely by udder inflammation with a considerable hard gathering in one of the glands. The secretion was watery and thin with many small flakes. I examined it on the 8th of June and found only a small quantity of short and thick Bacilli. Most of these were so short that you might easily call them oval forms, some were a little narrower in their middle, in others the narrowing was near the end of their body. On the 9th of June the inflammation was less, and on the 14th, the cow was perfectly cured. The microbes found would not grow on gelatine (temp. of a room) but on Agar-agar, (temp. of the body) they grew quickly, generally as a thick pale-coloured string along the channel, and as a thick white dryish spot on the outside edge. By cultivating on plates the organism was proved to be pure. The colonies on the plates were small and round, with rough edges, so long as they were immersed, but when they reached the top they were surrounded by a thick whitish zone.

In another case I examined the effect on the udder with a Bacillus which was isolated from the secretion of an acute and severe udder inflammation. But it was doubtful whether this Bacillus had been the sole cause of the inflammation, as I also found several finer Bacilli; and another examination found in the same secretion a Micrococcus in short chains. I isolated by cultivation on plates a thick Bacillus, which, as a rule, was very short, but also sometimes grew into a long stave. It grew in gelatine as well as in agar-agar; in the first-named, it caused, in the lapse of two days, a mistiness through nearly the whole glass. In agar-agar, it grew very fast, and in five to six hours caused a white line along the punctured place and a thick spot on the top; later on both these turned voluminous. The third case with a Bacillus which I examined was a small short organism, which, when cultivated, grew into long moveable chains, which had the peculiarity during growth of melting the gelatine. It came from an udder secretion which contained a Micrococcus, and it is not to be supposed that it played the chief part in the cause of the udder disease. A question of great interest, and one that has been much discussed, is, can suppurative inflammation, *i.e.*, inflammation with formation of pus, occur without the agency of Micro-organisms. Many examinations have been made of foci of suppuration, and generally one or more forms of Bacteria have been found in the pus. Mostly I have found a Micrococcus partly lying in lumps—Staphlycoccus, partly in chains—Strepto-coccus. It has been proved that when strongly irritating chemical substances, such as croton oil, turpentine, or mercury, are forced under the skin of animals, and especially dogs, suppuration occurs without Micro-organisms being present. But, as a rule, it is always Bacteria that cause udder inflammation. The question is now asked, is it the Micro-organisms, or their products, which arise during their growth, which irritate the tissue so much that pus is formed?

It was now shown that the microbes in several cases were to be found only in a very small quantity, and they disappeared quickly, but the secretion continued for some time after to have a purulent character. All the facts go to prove that it is not the microbes alone which cause the formation of pus, but also the chemical products which are formed through the agency of them—microbes—on the milk, which may be supposed to remain some time in the milk which is not entirely emptied out. Meanwhile, these products will be removed shortly, and the suppuration then stops. To prove this, we have seen in all udder inflammations in which the microbes disappeared quickly spontaneous cure was the result; but, in some cases where a cure could not be effected quickly, microbes could be proved to the last. It was now time to try what effect it would cause to let into the udder a cultivation in which the disease-causing Bacteria were killed, while the chemical products which originated in connection with their growth might be supposed to be present. I succeeded in causing a severe udder inflammation through inoculation of these chemical products alone, but it disappeared much quicker than the one in which Bacteria had been inserted, and the fever was, in this instance, much less. I shall now try to prove Frank's theory about the drop of milk which hangs at the end of the teat being a means of Bacteria reaching the inside of the teat.

I have tried three different forms of Bacteria, which all proved to be able to produce udder inflammation when forced into the milk reservoir; but they were not able to force their way through the milk channel without assistance. These experiments are not sufficient to overthrow Frank's theory.

Because infection did not occur in these cases, it is not proved that it cannot happen under more favourable circumstances; meanwhile, it is shown that it cannot happen very easily. If Bacteria could with ease force their way through the narrow milk channel of the teat, then it would be incomprehensible that cows which are stabled in infected stables, and whose teats are every now and again dipped into all sorts of uncleanliness, could possibly escape udder inflammation, which they, fortunately, frequently do. I find that this spontaneous intrusion of Bacteria is rare.

I have had a cow standing for months with three or four different udder inflammations, one in each gland, and the secretion from each was proved to contain only the Bacterial form which I had forced into it. I have experimented on other animals with a like result. The above-mentioned animals were certainly kept very clean, and the secretion was not, as a rule, milked on the floor; but it happened now and again that circumstances were not unfavourable for the transmission of one Bacterial form from one gland to another. As regards the

power of infection, there are two points which are proved.

We may suppose that some forms of Bacteria force their way easier through the end of the teat than others, in whatever way this may happen. They may live in a dried state for some time near the end of the teat, waiting for a favourable opportunity to force their way through. This is hypothetical.

As we cannot put too much confidence in Frank's theory then, there remains nothing more than to suppose that a cow may now and again get to lie so that a small article such as a fine straw or stiff hair, or something similar may penetrate the orifice of the teat. I do not think the Bacteria need be helped right through the channel. This question, however, is one of theoretical rather than of practical interest. That which is of practical interest to us is, to learn how the importation of Bacteria from one udder inflammation to another is brought about. Several important conclusions may be drawn from this, as regards the treatment and especially the prevention of the disease.

It is clear that cleanliness in the stable is of the greatest importance. Generally speaking, udder inflammation occurs more frequently where litter is wanting or the stables dirty from other causes, than when the opposite is the case.

Without doubt many seeming exceptions may be found to this rule; but the question will then be about infectious cases of udder inflammation. If such a case has once entered a stable, it will naturally give rise to a great number of such cases, although the stable is good and the stock cleanly. Cleanliness in a stable is highly unfavourable to the spread of the disease in question; but in spite of all measures of cleanliness there will always be plenty of media in which Bacteria thrive. It is certainly of great consequence whether the stables contain animals having morbid discharges from the vulva. It is important to clearly understand that the secretion from the diseased gland must never be milked on the ground, as it has generally been up to now. This is of great importance in the cases of the infectious classes; the morbid secretion generally contains the virus; but even when the Bacteria of which we speak are those which are found also in decomposing urine, feaces, &c., there is no reason why we should increase their number in the stable. The abnormal secretion should always be milked into a separate bucket, taken away from the stable and boiled, or destroyed in some way or other. As soon as infection has occurred, the infected cows ought, as far as possible, be separated from the healthy, and milked separately, and we must always remember the danger of transmission through the milkman's hands. Nocard and Mollereau were successful in mastering the cases they had in hand as soon as they succeeded in getting the infected cows milked last and their healthy teats first, and the milkman washed his hands and the cows' teats with a 3 o/o solution of carbolic acid and water before milking. The milk from the diseased glands was put together and used as food for pigs.

In the curative treatment it has always been considered of the greatest importance to get the affected secretion emptied as soon as possible, and most effectively. The practical knowledge of the importance of this proceeding seems to agree very well with the new apprehension of the cause of the disease.

If it is through the Bacteria living in the milk that causes the disease; then the proper cure must be to remove these as soon as possible. The new theory cannot yet show any advance in the treatment of the disease. It seems reasonable to attempt to destroy Bacteria by injection of antiseptic agents through the teat.

Franck tried injection of lukewarm solutions of carbolic acid (10 o/o), but without perceptible effect. Nocard and Mollereau, sometimes, saw better effects with solutions of boric acid (4 o/o), but this may only depend upon the fact that their Streptococcus will not thrive when the chyle turned too soon. On the whole, it is not impossible that one particular Bacterial form is destroyed by one chemical product and another by another. I think we may hope that future examinations and trials will bring forth advances as regards the treatment also; but I do not think it wise to place too much reliance on the power of killing the Bacteria by injection, because it will always be difficult to penetrate far enough into the small milk passages where the Bacteria can hide themselves. I cannot close this long lecture about Bacteria in the milk without thinking of the important part these small beings play in the whole dairy business. All sour milk arises through Bacteria. There are most likely several classes of Bacteria which cause milk to turn sour. Whence do they come? It has sometimes been supposed that they were to be found in the pure milk in the cow's udder. It has, however, been confirmed a long time back that this is not the case. There are no Bacteria in the milk so long as it is in a sound udder; but as soon as it is exposed to the open air spores fall into it from the air and from articles with which it comes in contact. Some of these spores are useful, and such we seek to cultivate in the cream tub. Others are dangerous, and cause an unfortunate alteration in the milk.

There is no doubt that most—I should think all—mishaps in milk, butter, and other dairy products are caused by micro-organisms.

Bacteriological examinations of milk and dairy products should thus, without doubt, play a greater part than ever. Perhaps we shall one day advance so far that the dairy is treated as rationally as is the brewery.

The carrying out of this idea will most likely be associated with a deal of great difficulties.

A NOTE ON ANTHRAX.—An eminent veterinary surgeon, with a large practice among dairies in Dorset and Somerset, told me that in every case where that terrible disease, anthrax, had prevailed, he found that a dog had been used to drive the cows, the excitement—especially when the stomach of the cow is filled to repletion with grass—being calculated to heat the blood, and highly conducive to apoplexy, for which anthrax is but another name.—*North British Agriculturist.*

CASE OF OPEN ŒSOPHAGUS.

By W. R. Davis, Douglas, Isle of Man.

On May 19th last I was called by Mr. Alex. Cowle, of Onchan, close to this town, to see a three-year old filly, which had been kicked in the neck a week previously. I found the filly dull, off its feed, and unthrifty. On the left side of the neck, about the lower third, was a large swelling, having an opening through which a discharge exuded. On introducing the finger, the whole of the muscular and subcutaneous structure was found to be infiltrated, and on the discharge being examined carefully particles of masticated grass were plainly visible. The animal was given a drink of water, and then no doubt remained as to the serious nature of the lesion, because a portion of the water came through the wound.

The orifice was now slightly enlarged, the cavities broken down by the finger, and the whole space thoroughly washed out and injected with a weak solution of mercuric chloride. A muzzle was put on, and nothing allowed but water, hay-tea, and boiled oatmeal and linseed, strained, with occasional drinks of milk. The mercuric chloride solution was injected twice a day, and in a week the swelling had wholly subsided, but the opening (now a very small one) allowed a thin stream to percolate out when a drink of water was given. In the course of a few more days the opening had completely closed, and the filly was turned out to grass, and has done well ever since. There appears to be no stricture of the gullet and very little external thickening.

This, I think, is a rather satisfactory termination of what at first sight appeared to be a formidable case, especially as the owner despaired of the filly's recovery when he knew the nature of the injury.

RUPTURED STOMACH, WITH PECULIAR SYMPTOMS.

By E. C. Howard, M.R.C.V.S, Newbury.

Having read Mr. Morgan's case of the above in last week's issue of the *Record* with much interest, I think the following case, which came under my notice a few days since, may prove of interest to your readers:—

On Thursday, the 17th inst., a grey carriage horse, standing about 16 hands, was brought to my infirmary, the driver remarking that he was badly griped. Having made a careful examination, I adopted my usual treatment for colic, and placed him in a large loose box. The pulse was at 60, temp. 100·5, body surface and extremities very cold. Immediately on placing the animal in the box he commenced to walk round and round, as close to the walls as possible, and continued this behaviour for 17 hours, *i.e.*, from 11 a.m. on Thursday morning until 4 a.m. on Friday, showing no inclination to lie down, and never once looking round to his side. During the 17 hours he never stopped for more than five seconds, and that but seldom, and at 4 a.m. on Friday dropped dead. I may say that for two hours before death his pace was considerably quickened, being then changed into a slow trot. On making a *post-mortem* examination the stomach was found to be ruptured at the cardiac extremity, the rupture being seven inches in length and affecting all the coats, and, as in Mr. Morgan's case, a quantity of ingesta had escaped into the peritoneal cavity.

IS DISHORNING CATTLE CRUELTY?

By John Atkinson, F.R.C.V.S.

Mr. Greaves gives his reasons for answering this question in the negative, and as he is a member of Council and Consulting Veterinary Surgeon to the R.S.P.C.A., it will be useful to see upon what he founds his opinion. He has closely observed the operation, noted the amount of pain inflicted and feels "clear on the point that the degree of pain suffered does not amount to cruelty." What does this mean? Does Mr. Greaves suppose that "cruelty" depends upon the degree or amount of pain inflicted? I have always thought that an operation quite justifiable might be most painful and yet not cruel, or an operation might be only slightly painful and yet constitute unmitigated cruelty. How do we judge the amount of pain caused by any violence? What are the symptoms of pain and how are we to know exactly what an animal suffers? If you strike a bullock on its horn it seems to show very acute feeling; a broken horn also gives evidence of some pain. Injury to a horse's hoof is always considered painful, and we do know that injury to our own nails is very painful. Our nails, the hoofs of horses and the horns of bullocks are very similar and it is not forcing analogy too much to believe that in each of these structures pain arises as the result of certain causes and is analogous in degree and kind whether the animal be a horse, cow or man. There may be room for some difference of opinion, but he would be a bold man who denied that sawing through a horny structure moulded upon a bony foundation did not cause pain and even great pain.

The question for veterinarians is simply the degree of pain caused. The other question of whether it is justifiable is a matter for judges to decide. If we think an operation is justifiable we are very prone to confuse the issue and arrive at the notion that little pain *must* be caused. We may fancy an operation is justifiable, but we should be very careful not to let such an opinion influence our idea of the amount of pain it causes. When an animal struggles and bellows I should say that it does so for some reason. When frontal sinuses are so inflamed as to cause suppuration I can hardly believe that no pain is caused. Some cases of dishorning do well, but surely Mr. Greaves does not quite describe the exact state as follows—"If we examine the sawn surfaces of horn (of course he includes bone) in two or three hours after the operation we shall find that they have become dry, a film has covered them which excludes the air so that neither inflammation nor suppuration follows." What is this wonderful

film which prevents inflammation? Is it some specific secretion peculiar to dishorning? or is it only clotted blood which will either putrefy or dry into a hard scab to be detached later? Mr. Greaves will pardon me if I am a little sceptical about this beneficial and mysterious film, and also if I express some surprise that "all tenderness and soreness are gone in two or three days." I have I may say no practical experience of disborning, and thus perhaps these phenomenal actions of wounds in the ox puzzle me. In other animals wounds do not behave as here described nor—as far as I know—do wounds of other parts even on bullocks.

Probably Mr. Greaves published his opinions on this question as a sort of apology for having suddenly changed them. I believe his conversion dates from a meeting of a little Society in Edinburgh where all the members believed in Dishorning and Inoculation. If no other reasons can be given than those stated in *The Record* of last week I venture to say that no foundation exists for them. A gentleman's *ipse dixit* is not sufficient to settle a physiological point, and much stronger evidence than Mr. Greaves has adduced is wanting to prove that dishorning does not cause *great pain*. His supposition that an opposite opinion is "based in sentiment" is purely gratuitous, and though it may calm his own conscience it will not appeal to the intelligence of scientific men.

Mr. Greaves is a town practitioner, occupied I suppose entirely with horses, but his experience—even in fifty years—is remarkable. He has seen "dozens of horses and cattle die horrible deaths caused by being gored." Has any other man even in a purely country practice seen *one dozen* fatal cases from this cause?

I ask for information. The members present at the Veterinary Congress and at the "National" meeting when dishorning was discussed seem to have had little knowledge of the innocent and simple operation of sawing off cows' horns. If the operation is a very painful one let us be honest and say so. If it is not, some authority should explain what peculiar condition gives rise to the insensitive condition of horn-secreting structures and bone in the ox tribe. Nonsensical assertions about the distributions of nerves in bullocks' horns will not do; they may pass master before a Scotch Sheriff but they cannot be accepted by veterinary science.

The *Gazette* of the 22nd inst. contains the formal notice that Lord Basing, Mr. George Thomas Brown, Professor of Pathology at the Royal Veterinary College,, Dr. George Buchanan, F.R.C.P., F.R.S., Dr. Joseph Frank Payne, F.R.C.P., and Dr. John Burdon Sanderson, F.R.C.P., F.R.S., have been appointed members of a Royal Commission, to inquire and report "what is the effect, if any, of food derived from tuberculous animals on human health; and, if prejudicial, what are the circumstances and conditions with regard to the tuberculosis in the animal which produce that effect upon man." Mr. Charles Leopold Hudson, L.R.C.P. and F.R.C.S., is appointed Secretary of the Commission.

VETERINARY MEDICAL SOCIETIES.

THE SOUTHERN COUNTIES VETERINARY MEDICAL ASSOCIATION.

A Meeting held at "The Bull" Hotel, Rochester,

Continued from page 16.

Dr. Fleming read an extremely interesting paper on "Variolous Diseases." He first pointed out that each species of animal seemed to have its own specific form of variola which was eminently contagious to individuals of the same species but very rarely to those of others. He then shortly described the symptoms of the different variolas affecting the domestic animals and quoted experiments showing which could and which could not be transmitted to other than the species in which it was specific. Small-pox of man by inoculation of cows did not lose its identity, it remained small-pox and retained its dangerous properties. Cow-pox when inoculated in man remained cow-pox and although it gave an immunity against future attacks of small-pox, it was remarkable that when tried on sheep and other animals it possessed no such power. The nearest approach to similarity between any of the variolas was seen in cow-pox and horse-pox. Calves inoculated with horse-pox showed all the clinical signs of cow-pox, whilst horses inoculated with cow-pox exhibited an eruption precisely similar to horse-pox. The disease either from the horse or cow could be transmitted to man in whom it gave rise to immunity against small-pox. Dr. Fleming expressed his belief that horse-pox, though seldom recognised in this country, was more prevalent than was suspected, but owing to its benign character was not noticed by the owners and so not brought under the observation of veterinary surgeons. He also pointed out the differences which exist between variolous and syphilitic diseases, demonstrating by numerous facts and experiments that although we might sometimes see somewhat similar clinical symptoms in both diseases, yet that they were quite distinct and separate affections.

Discussion.

The Chairman: The subject is now open for discussion, and we shall be very pleased to hear the remarks that any visitors may choose to make. I believe Dr. Bell is present; perhaps he will be kind enough to favour us with some remarks.

Dr. Bell: Mr. Chairman and gentlemen, I really have nothing to say, except to express the great pleasure with which I have listened to the very interesting paper which Dr. Fleming has read. The subject of horse-pox, as throwing a light on small-pox and cow-pox as well, is really new, and I suppose from what we have heard it is a recent discovery that horse-pox is as abundant as it is, and its producing such very mild symptoms. I do not quite remember whether Dr. Fleming, when speaking of it, said there was any other symptom by which there would be an absolute distinction made between the two kinds of grease, excepting the absence of general symptoms in the one and their presence in the other. I think, too, that the point which Dr. Fleming made as to the absolute distinction between syphilis in the horse and horse-pox, as showing that probably there would be the same complete distinction between cow-pox and syphilis in the human being, is an important one, showing that those who are anxious, by a side wind, to throw out vaccination are not likely to get any foundation for their theories from fact. There was also another point which seemed to me to be of considerable importance and of great interest, the fact that however you get hold of

small-pox material and put it into other animals you cannot get it put into the mould of those animals; if you bring it back to the human species you get it as small-pox again. The subject seems to have been handled so very completely and exhaustively by Dr. Fleming in his interesting paper, that I have nothing to add to what he said, because his knowledge far overlaps mine on the subject. I am very much indebted to the invitation which brought me hither, and I wanted just to state these few points in order that the discussion might proceed. As a visitor I am very muuh indebted to you for inviting me, and to Dr. Fleming for the very interesting paper which he has read to us. (Cheers).

Mr. GREAVES (of Manchester): Mr. President and gentlemen, I have listened with very great pleasure to the elaborate paper of Dr. Fleming, and I go away with knowledge that I did not possess on this important subject. At one time of my life no one dreaded the scourge of small-pox more than I did, because my favourite brother died of small-pox and I saw him a few hours before he died; it was a sight that I can never forget. It was never known how he got it, but it was conjectured that it was taken through the towels that had been at the washerwoman's, where it was known afterwards there was small-pox in the house. In reference to blacksmiths becoming affected with breakings out, I have known numbers of blacksmiths at one time and another who had sore hands and little pustules produced by shoeing horses that had grease. It was believed that they became inoculated. The Doctor has exhausted the subject, which will bear reflection. I hope I shall have an opportunity of seeing it in our Journals, for I am sure we shall all improve ourselves by studying the subject placed before us as it has been.

Mr. HUNTING: I should like to ask a question or two. I am exactly in the same awkward predicament as the other speakers. Dr. Fleming has so entirely overlapped any knowledge I possess that it is difficult to say anything further, but, leaving altogether the subject of the transmissibility of one of the diseases of animals to man, I should like to make a few observation on the question of horse-pox. It seems to me very strange that with the number of horses which are attended now by veterinary surgeons, and the number of young horses that come through the hands of men who hold large contracts, we do not see more evidence. I can quite understand that on a farm young horses may escape attention, but I hardly understand the very large number of young horses now passing through the Army, or Omnibus and Tramway yards—I cannot understand so many of these horses going through and the very small number of horse-pox cases that are detected—if the disease exists to any extent. After the experiments of the well-known European authorities, it would be impertinence on my part to say the disease did not exist. In my own practice, which has now existed for some years, I have only seen three cases which have answered the description of horse-pox, cases that used to be described as stomatitis, cases where you have an eruption on the edges of the lips and mouth. In no case have I ever seen among the horse-keepers any eruptions on the hands or arms that were traceable to disease of the horse, nor did these three cases that I saw, although they came from Scotland in a batch of thirty horses, spread to any of the others. They were all apparently unaffected when they arrived here. As to grease, it seemed a most unfortunate thing that this name should be given to the horse-pox, because grease is so constantly applied to an ulcerating or vesicular condition of the heels of horses, (certainly not of a communicable nature, and having nothing to do with any variola) that one is very apt to get confused about the nature of the diseases; and yet some of the diseases, some of the conditions described as grease, at any rate on the continent, must be of a specific nature, because Dr. Fleming related more than one case where the matter was inoculated to a cow, and then to another cow, and from that cow to man, every case being effective, and every case producing clinical appearances of a variolous eruption. It is remarkable too, that Professor Bouley should have said that he had not noticed this disease until his attention was drawn to it by other people. And then when his attention was drawn to it, and when he found its similarity to other variolous affections, it is rather remarkable that even then he should have said that he only remembered the disease from time to time. It seems not to be very common on the continent. I am extremely glad that I came here to-day, because I had very hazy notions about the variolous diseases, and I never yet heard the thing put so clearly as Dr. Fleming has done it. He has told us what we all knew before, that variola existed in all domestic animals; but he has told me what I did not know before, that apparently horse-pox and cow-pox are so much alike, and are so interchangeable among the various animals that there is a possibility they may be the same disease, but that neither of them can be confused at all with small-pox. It is most important, too, that we understand something more about these diseases—the diseases that are transmissable from animals to men, and the diseases that are supposed to be. Practically, there will be a pretty close association between medical men and veterinary surgeons in the future under this new Infectious Diseases Prevention Act, and we may be of great assistance to each other, (hear, hear). It will be as well that we recognise these variolous diseases, and also that the medical men should not always recognise loss of hair or a little eruption on the teats as a disease which *must* be transmissible, and which *must* be the cause of disease in man, simply because they are unable to trace any other direct contamination. It seems a little far-fetched, a little hasty, in fact, for one or two Medical Officers of Health lately to have adopted what I think is a very bad piece of logic, that because they failed to trace how the milk became infected from the human subject they had a right to assume the infection resulted from the animal that produced the milk. There are many reasons why men working about a dairy should disguise the existence of disease, even in their own families. There are many ways in which they themselves may carry it without knowing it. Inability to trace the disease from human contamination ought not to be a reason for arriving at a conclusion that it *must* be from the animal, (Cheers).

Mr. WALTERS: Mr. President and gentlemen, I have received a considerable amount of instruction from Dr. Fleming's very able paper. I may mention a case with which I had something to do, that occurred in Canada in either the year 1863 or 1864. It was the case of an outbreak of horse-pox in two batteries of Artillery, one of which was under my charge. I noticed it particularly, because the disease assumed two or three different phases. In some cases we had only the vesicular eruption covering the buccal membrane and extending round to the angle of the jaw; in other cases it ran on the pustular stage, and in a few aggravated cases the ulcerated stage was reached. I wish more particularly to mention this outbreak, because it proved to me most effectually that although the disease was highly contagious it was not infectious. In my battery—or rather, I should say, the battery under my veterinary charge—I took the precaution of isolating the whole of the cases that occurred to the best of my ability and the disease appeared to be very promptly stamped out. In the other battery of Artillery the cases were not isolated to any very great extent, and the consequence was that nearly the whole of the horses were laid up within a short time, but the whole disease appeared to me of such a benign nature except in the few ulcerated cases I have

mentioned, that it speedily yielded to a very simple treatment. Mr. Hunting mentioned just now his wonderment at our not seeing more cases of horse-pox in the Army. Well, we do occasionally meet with cases amongst young horses, and in examining the ages of young horses we frequently come upon the symptoms remaining from vesicular eruption, and plainly marked in the mucous membrane of the mouth. I daresay most of us here have seen these symptoms from time to time, but you more particularly meet them in young horses from three to five years of age. I have no doubt. it being such a very benignant disease, that we often pass cases through our stables, and cases are often passed through the various Companies' stables and not particularly noticed, although I am quite sure that the disease exists to a much greater extent than we give it credit for, very frequently, escaping our notice. I often think if one paid a little more attention to the young stock when in the field and after a given time, say between two and three years, that we should see a good many more cases than we do at present. (Cheers).

Mr. HUNTING: There is one thing that might be made clear. I think I must have misunderstood Dr. Fleming as to an experiment that he quoted. With horse-pox matter there were 60 soldiers inoculated. First of all there were 6 soldiers inoculated and then from these 6 there were 60 inoculated, only 8 of them had not been vaccinated, and yet 40 of them took well. This would suggest that their first vaccination had not been a very good one, or that there was not quite the immunity to be derived from the one disease after an attack of the other—that is—if I did not misunderstand Dr. Fleming.

The CHAIRMAN: Dr. Fleming will answer that later.

Mr. WALTERS: There is one thing I also omitted. I never remember a case through this outbreak that I speak of, or any subsequent cases, where the disease was transmitted to man.

Mr. J. B. MARTIN: I rejoice to think our friend, Dr. Bell, has assisted to-day, because I think we may be usefully associated in giving some reason for diseases, particularly when they arise from animals, or from the partaking of milk of diseased animals, such as Tuberculosis. We know Tuberculosis produces consumption in children. For the surgeon that, I think, is very important, and also where milk comes in close proximity to any disease it does absorb the germs, and thereby may communicate disease to a human subject. About four or five years ago down at Canterbury we had a case, just before the Hendon case of which there was so much said; I did not at the time attach so much importance to it as I did afterwards. In a whole district where they partook of the milk, it produced febrile sore throat and constitutional disturbances. I went down and examined all the cases, all the food, and all the premises. Well, it was a scrupulously clean place, the water was a running stream, the cows were out in a field and had a lodge there, and there was nothing to suggest that it came from any bad form of treatment or any want of sanitary arrangement. I have not the least doubt I saw these vesicles on the teats, but I did not attach that importance to them then that I have since, and I have not the least doubt that the Medical Officer of Health there wrote in the paper and particularly pointed out that the milk came from these cows alone. Now, they were perfectly healthy, and there was no scarlet fever or anything there to account for this disease. To a medical man this is most important. If I had paid particular attention to the Hendon case I could have thrown some light on it. Forty years ago I used to collect this lymph for the Doctors in our neighbourhood to vaccinate the children with. It is forty years ago, so that I have had my attention directed to this, but I never knew at the time that this was the cause of this sore throat. I think it was Mr. Hunting who suggested about the Vaccine and the Doctors fighting so much against it. I might just mention now—and perhaps Dr. Bell will say something upon it—I am at a loss to understand why people do not believe in Vaccination, because in our young days we used to see about one in every three pitted with Small-pox where we see none now. Again, we read the statistics of our Legistation in Ireland. I recollect many years ago that one year there were about two hundred fatal cases in Ireland. I think after the institution of the Vaccination the numbers were reduced to a hundred; the next year down to forty, and the next down to two. I think that is a conclusive proof of the utility of the Vaccination, and its indemnifying the human subject against Small-pox. Of course, this has nothing much to do with the subject, but I think these are subjects it is necessary for us to discuss where we have medical men with us.

I keep a great many horses, and have been mixed up with them, but I have never seen any cases of Variola. I did not recognise it. Of course, we know what Grease is, and I have seen sores about horses' mouths; but I have never recognised it enough to appreciate it, or to call it Small-pox or Variola. (Cheers).

Mr. J. F. SIMPSON: I am bound to say the paper of Dr. Fleming has really opened my eyes and set me thinking. It is quite possible I may have seen cases of the Horse-pox which has been referred to and failed to recognise them; but I cannot, during the 25 years I have been in practice, call to mind ever having seen a case in my own practice. I saw one case once to which my attention was called, but not in my own practice; but as a fact, for the 25 years during which I have practiced I have either not been observant enough, or the cases have not come under my notice. With regard to the Grease of horses I understand Dr. Fleming recognises two kinds of Grease. He refers to the material that should be obtained for inoculation, and says it is derived from a situation lower down than the ordinary seat of Grease—I think those were the Doctor's words. In replying to the various speakers if he would kindly give me some little information upon that subject I should be extremely obliged.

Mr. JARVIS: I may have seen cases of Horse-pox from time to time, but if so I have passed them over. I certainly have not recognised one.

Mr. WRAGG: I have been in practice a number of years—nearly as many as my friend here on the right, (Mr. Martin)—but I have failed to recognise this disease. I certainly cannot charge my memory with having seen anything like the pustular eruption on the side of the lips, even as has been described by Mr. Hunting.

The Hon. SECRETARY: Mr. President, Gentlemen and Dr. Fleming, in your reply sir, I should like to know whether my impressions are correct—that there is more than one form of Variola affecting the Cow; whether the form of Variola that we know under the name of Cow-pox is the only form, or whether there is another form which was touched upon by Mr. Martin just now. I presume the cases which Mr. Martin had to deal with were of a variolous nature. (Mr. Martin, Yes.)

I have had a great deal to do with cattle practice, and I occasionally meet with eruptive diseases affecting the udders of Cows which also cause an eruption of other parts of the body. The eruption was not confined to the udder. In cases of Cow-pox we find that the eruption is confined to the teats and to the udder, but in those cases which I have noticed, which I think are similar to those spoken of by Mr. Martin, the eruption has appeared in patches in other parts of the body. Beyond the treatment required after the vesicles have broken, it appears to be a very benign disease, and it has not to my knowledge been followed or accompanied by any disease amongst the attendants, nor, as far as I

could ascertain, amongst the inhabitants of the locality.

Mr. MULVEY: Like most of the speakers here I have not noted any particular cases of this disease, but it has just occured to me that it might be interesting for me to state that some few years ago a number of ponies were attacked with a disease exactly similar to that Dr. Fleming has described, and which I myself at that time really recognised and put down as an attack of Horse-pox. There were the eruptions running through the various stages in the buccal membranes, the mouth and the lips. The disease was of a very benign character, and passed off in the course of 9 or 10 days and there was very little constitutional disturbance. I mention this as somewhat confirming what Dr. Fleming has said.

Dr. FLEMING: Mr. President and gentlemen, I rise to reply to some questions which have been put, and also to make some remarks supplementary to those I made in my paper. In the first place, you will allow me to express my pleasure to find that the subject is a new one comparatively. I do not think myself that it is altogether new, but unless one's attention is directed very often to such things, one is apt to pass them by without observing them. Such would have been my own case in the outbreak of Horse-pox which I witnessed, and which to me was most interesting. For a great number of years I made the subject of Variolous diseases a special study, and especially with regard to the identity of Small-pox and Cow-pox, a subject which, as I have said, had been dealt with by medical men as if it were threshed out, that is, that small-pox, and Cow-pox were one and the same disease, that by one transmission of Small-pox through a Cow the Cow-pox was produced and that the Cow-pox was never altered again, never taken back to its own soil and transmitted and re-transmitted from generation to generation of men, and remains Cow-pox. It struck me as such an anomalous notion that I thought that I would study it thoroughly.

When stationed at Aldershot, I lived near a large dairy of cattle, and the farmer, who was a friend, allowed me to experiment upon some of his cattle; I did not tell him what I was really doing. Being acquainted with a Physician at one of the London hospitals, I got some Small-pox virus, and I inoculated cow after cow. Sometimes I got such a large supply of virus that I was able to pour it into the inoculation; but with Vaccine lymph I could produce the Cow-pox at once, which plainly indicated to me that the two diseases were not the same, though in some features they might resemble each other; and that though they belonged to the same family, the diseases were entirely dissimilar with regard to their transmission. I then came to the conclusion that Small-pox could not be communicated to the cow, and that any person who tried to vaccinate from the vesicle formed might produce very disastrous results; he would simply transfer the Small-pox back to the human species. Then, I read about these outbreaks in France, especially Bouley's work. When stationed at Windsor we got a number of black horses up from Yorkshire, and a day after their arrival the farrier-major called my attento one or two of them having an eruption about the lips and mouth; they slavered a good deal and could not eat. It struck me at once I had a case of Horse-pox. I may have seen cases before but I was delighted. There were vesicles around the mouth, sometimes running up the face, inside the lips, on the tongue, under the tongue; the glands were tumefied, and there was a certain amount of fever; but the most noticeable feature was the difficulty the animal had in eating. I put the horses into loose boxes and watched them. Some days afterwards a case was reported in one of the troop stables in a far distant corner of the barracks. There was another case of Horse-pox. How did it get there? I said, "Here is a most infectious malady"; it was a very well-marked case indeed. I began to enquire, and after a great deal of trouble I discovered that this troop-horse was a horse dismissed from the ranks, and the soldier, having to go on parade, did not know where to find a bridoon, and took one of these young horses' bridoons. It shows how very active the contagion is. There was an officer's horse in another loose box, and the horse had cracked heels. It had been standing out in the open and had inflamed the skin of the pastern, and my attention was drawn to him one morning. The skin in the heels was very much inflamed indeed, and there were vesicles on the skin. I then discovered that the man who attended this officer's horse had borrowed one of the sponges from the infirmary box, used to sponge the mouths of the animals. This horse had been affected in the heels by the sponge which was used to dress the mouths. I had operated on a horse some days before, and going into the box one morning I found his hind legs enormously swollen. I was afraid it was a case of Septicæmia; however, in the course of a day or so, there was an eruption. This was a similar case. A sponge had been used to sponge the discharge from this other horse, and so I had abundant evidence, not only of the contagiousness of the malady, but also of the different forms it may assume. The horse which had had the operation performed upon it had not only the eruption inside the face, but over the body to a large extent; so that there could be no doubt whatever about it. But the most striking fact, to my mind, was that presented by the farrier-major when he came to me one morning and showed me his hand; there was a large vesicle on the back of the first finger, and an extensive inflammation of the skin, and it was very much swollen above the wrist. The man himself was feverish, and he was sent to the hospital. Our Regimental Surgeon was absent on leave at the time, and the Surgeon of the Foot Guards, who saw his finger, said it was Syphilis. He said his hand must have been in some improper place, and it must have been syphilised. However, our own surgeon came back soon afterwards (he is now in the First Life Guards), saw this man's finger, and said it was a typical case of vaccination. The man was in the hospital for some time. That shows you at once the opportunity which I had, on a very small scale certainly, but entirely on my own observation, of seeing the disease, both in the horse and in man. With regard to Horse-pox and Horse-syphilis, there can be no doubt about it that no one should make the mistake. Horse-syphillis is a malady with which you are not acquainted in this county; but they are now having some experience of it in the United States of America, through French horses having been imported, and it seems they were infected before they left France, and they infected a great number of horses in the United States. This Horse-syphilis is a chronic disease. The contagion is conveyed during the contact of the sexes, and it is pustular and vesicular chiefly about the generative organs; but, in a short time, it becomes constitutional, and drags its course along for months sometimes. The animals become weak, and at last die in a state of marasmus. It has been very exhaustively studied by the Director of the Buda-Pesth Schools, and his investigation goes to show it is very closely allied to human Syphilis. There are no comparisons between Horse-pox and Horse-syphilis. If anyone ever saw Horse-syphilis they would never mistake it again; it is vesicular in the first place, and the vesicles are pointed conically. They are white, pearl-coloured, and they are either discrete or confluent. When Horse-pox affects the heels it resembles very much the ordinary disease called "Grease"; in fact, any disease of the horse's heels is called by the grooms and farriers "Grease." It is the rupture of the vesicles which causes the discharge, and that has caused the grooms and

the people to give the name of "Grease" to it. The disease of the skin in the heels is vesicular, and there is not the faintest doubt that farriers are often infected, but do no say anything about it. I myself can call to mind several cases where shoers have been infected through shoeing horses. The Cow-pox is extremely closely allied to Horse-pox, although the clinical features of the disease are so very different. Cow-pox you all are familiar with, the large vesicle becoming in time a crust, and the depression in the centre; the large dark brown crust marks it at once. There is no doubt that there are other vesicular diseases of the Cow, but I am not acquainted with them. I fancy that if the disease is vesicular, and shows the form which we are accustomed to believe is Cow-pox, that there is no doubt about the presence of Cow-pox. The appearance of Cow-pox is extremely characteristic. It is a mistake to assume that the eruption of Cow-pox is confined to the teats or the udder, or even confined to the Cow; it has been seen in the Bull, and it will be seen in any other part of the Cow's body to which the virus is conveyed. With regard to the soldiers in France who were inoculated, lymph was collected from these pustules with the greatest care, that is from the pustules of the mare, and seven young soldiers of the 10th Hussars were inoculated. On the sixth day six men showed a decided inoculation. From four soldiers lymph was taken. With this sixty-four men were inoculated, eight of whom had never been vaccinated. In forty of these the results were favourable—sixty per cent. had been successful. With regard to the prevalence of Horse-pox, I fancy that it is a great deal more so than we imagine. Only the other day one or two young horses were received as in-patients at the Royal Veterinary College. Professor Axe found they were affected with Horse-pox, and he inoculated from them, and produced the most marked Cow-pox you can imagine. Although the eruption of these animals' mouths was quite different from Cow-pox, yet the virus produced Cow-pox. Whether the horse gets its Variola from the cow, or the cow from the horse, I do not know; I am inclined to consider they are entirely independent diseases, but so very closely allied that the virus of one would produce symptoms almost identical with those in the other. There is only one form of Variola in the horse, there cannot be two. I do not know of any animal which has two. The prevalence of Horse-pox in this country, now that attention is directed to it, will be found to be greater than is imagined. The French veterinary journals very frequently describe outbreaks of Horse-pox, and a professor in the Lyons Veterinary School has studied the disease very carefully, and finds it now very prevalent about Lyons. Professor Trasbot believes that strangles in the horse is Horse-pox. You will find very frequently indeed that horses affected with what were supposed to be strangles had an eruption about the mouth, and the eruption running round the cheeks. I am inclined myself to believe that it is a form of Horse-pox; but when the vesicles extend to the mucous membrane, they produce suppuration, therefore you have, as in strangles, a muco-purulent discharge from the nostrils with tumefaction of the glands. My object was to draw attention to the fact that we have in this country two kinds of Variola, two species of animal affected with Variola, the horse and the cow, and that both these forms of Variola are intimately connected with the health of our population. I was also extremely anxious to remove the erroneous impression which prevails, especially amongst medical men, to the effect that Small-pox and Cow-pox are one disease; they are not. I have often had conversations with my old friend Mr. Ceeley, and, I think, towards the ends of his days he began to see his mistake. I fancy these gentlemen who have been successful in producing Cow-pox from Small-pox have been working at the same time with vaccine lymph. Certainly the most eminent experimentalists in Europe—those of France—have tried to produce Cox-pox from Small-pox, and have utterly failed. The virus in the pustule may be modified so that it will produce a localised form of Small-pox in man. It is perfectly certain that the two diseases are entirely dissimilar and entirely independent. Small-pox introduced into the cow remains Small-pox; Cow-pox introduced into man remains Cow-pox. It is also a curious fact that the disease which most closely resembles Small-pox in man—that is Sheep-pox—is one which cannot be protected against, there is no protection. Inoculation with human Small-pox virus will not protect the sheep from Sheep-pox, and neither will the virus of Cow-pox. It is a curious thing why our own species should be the only one which can be protected by the virus of a similar disease in animals, but nevertheless that is the fact. I trust that this erroneous notion that Cow-pox is only Small-pox modified by transmission through the cow will not prevail. One instance occurred in India many years ago. A medical officer who was at a station there, in charge of a very large district—he was not an Army Veterinary Surgeon, but had charge of a very large district—his vaccine lymph failed. He remembered the discussion which had gone on at the beginning of the century with regard to the production of vaccine lymph by inoculation, and he tried this. He inoculated one or two calves with Small-pox virus, and then he inoculated children and people on a very large scale, and produced a most alarming outbreak of Small-pox in that district. There was a very distinguished American, who did the same thing in 1861, in the States, and produced a very serious outbreak of Small-pox which spread in his district, so that the danger of the error is apparent. Not only that, if it were merely a matter of doctrine I think that errors in medicine should be abolished as much as we can abolish them, and therefore if we get rid of the idea that Small-pox can be converted into Cow-pox through one transmission, it will be a great deal gained. We are all anxious to have our medical theories on a sound basis. I am sure that the medical profession will not think it wrong of us if we dissent from the notions which are sometimes entertained with regard to animal diseases. I should like very much indeed that the veterinary profession should stand in the closest relation possible to the medical profession, and in these diseases which are transmissible from animals to man or from man to animals we have very good grounds on which to work together, and the success of medicine to a very large extent depends upon experimental pathology. The knowledge of veterinary surgeons can be utilised to a large extent by medical men, and I trust that those bodies who have it in their power to introduce experiments and to carry them out will take up this question of Variola in animals, and work it out for us. There are many points which are very obscure, and I am sure the obscurity should no longer prevail. We have ample means in our laboratories to study these diseases under every aspect, and it is rather a reflection upon us that we do not avail ourselves of those facilities and clear up these doubtful points which still remain with regard to them. (Cheers.)

The CHAIRMAN: It is my pleasant duty to move that a vote of thanks be rendered to Dr. Fleming for the paper he has been good enough to read to us. We might have wished there was a larger meeting to receive that paper, but I think we are all agreed you could not have had a better quality of meeting.

Mr. WRAGG in seconding said: Dr. Fleming has been connected with this Association since its commencement. My friend, Martin, certainly was the father, but I think Dr. Fleming was his eldest child. I have met him at this Association many times, and it gives me very great pleasure to meet him here to-day, and much more to

have heard the very interesting paper which he has given us.

The resolution was carried unanimously.

Dr. FLEMING: I thank you very much indeed for the reception you have given me. It has afforded me very much pleasure to have come here to-day. I think I remember the birth of this Society; I remember its infancy, and its growth into adolescence. I am glad to find it is existing and permanently thriving. It is a difficult thing to get a large attendance in the provinces, but, nevertheless, so long as half-a-dozen of us meet together it will be for good.

The CHAIRMAN: There is one more subject I have to bring before you, gentlemen, and is where shall we hold our next meeting which is due to be held on the last Thursday in September. There is Brighton and there is Southampton, and I think we ought to meet once in each county, and therefore it comes to their turn. There is such an accumulation of material that we may have to hold a special meeting somewhere, and in that case it would be held, I think, in Aldershot or some central place. Will you kindly arrange and decide which place you would prefer?

Mr. SIMPSON: What do we consider the Southern Counties?

The CHAIRMAN: I consider Kent, Sussex, Hants, and Surrey.

Mr. SIMPSON proposed and Mr. WRAGG seconded, that the next place of meeting should be Brighton.

This resolution on being put to the meeting was unanimously agreed to, and the proceedings then terminated.

Royal College of Veterinary Surgeons.

The quarterly meeting of the Council of the Royal College of Veterinary Surgeons was held on Monday, the 21st inst., Professor McCall, President, in the chair. The members present were General Sir F. Fitz-Wygram, Bart., Sir Henry Simpson, Dr. Fleming, Professor Pritchard, Professor Penberthy, Mr. J. Simpson, Mr. Roalfe Cox, Mr. T. Greaves, Mr. J. D. Barford, Mr. Cartledge, Mr. F. W. Wragg, Mr. T. Briggs, Mr. H. Kidd, Mr. W. F. Mulvey, Mr. Rutherford. Mr. R. C. Trigger, Mr. Malcolm, Mr. Thatcher (Solicitor), and Mr. A. W. Hill (Secretary).

The notice having been read convening the meeting, the minutes of the previous meeting were taken as read and confirmed.

The SECRETARY mentioned that Messrs. Walley, Walter, Wood, and Taylor had written regretting their inability to attend the meeting.

Presentations to the Library and Museum were announced, and a vote of thanks was given to the donors.

A letter was read from Mr. Mackay, of the Educational Institute of Scotland, containing a proposed scheme with regard to Matriculation Examination.

It was stated that Mr. John O. Rierdon, holding the Highland Society's certificate, had made application for enrolment as a member of the College. The certificate was verified by Professor Walley. The Secretary was authorised to issue the diploma.

A letter was read from the Farriers' Company, stating their intention to convene a Registration Committee as early as possible, and asking the President to nominate six members of the Council to represent the R.C.V.S. on that Committee. At the request of the President, the following reply was sent:—"Dear Sir,—In accordance with expression of your Honourable Society, the President of the R.C.V.S. has nominated the following gentlemen who would be willing to act on the Registration Committee *pro tem.*, Professor Axe, Dr. George Fleming, Sir H. J. Simpson, Mr. Wm. Hunting, Mr. F. W. Wragg, and Mr. J. R. Cox."

Dr. Fleming: I received a notice from the Farriers' Company to attend two meetings; but the notice I received was the first intimation I had that there was a Committee. I must confess I do not feel in a position to work on the Committee as it is at present formed.

Mr. JAMES SIMPSON: May I ask whether the President sent an intimation to these gentlemen that they had been selected?

The SECRETARY: No, we have not.

Mr. JAMES SIMPSON: I asked the question because I know some gentlemen who had been nominated received notice from the Worshipful Company of Farriers to attend a committee meeting, and they were unaware that they had been elected on the Committee.

The PRESIDENT: A communication was sent to me from the Secretary asking me to nominate gentlemen to act on the Committee, and I thought the safe plan for me to adopt was to send in the nominations *pro tem.* If I have nominated anyone who is unwilling to act, I am sure I am sorry. I understand these nominations are *pro tem.* so that we might re-appoint them. I think it is very important that those who are nominated should be willing to act.

Sir HENRY SIMPSON: I was not aware that this would be discussed, although I had intended to say something on the subject before the close of this meeting. I think it is unfortunate there is not on the agenda a notice that we should appoint members to serve on this Committee, and think it a great thing for us to do our business with promptitude, and especially when we are brought into contact with other bodies. I received a notice to say I was to attend a meeting of the Registration Committee, and I wrote to the Worshipful Company of Farriers to know how it was I came to have an intimation. I was not aware I was a member of the Committee, and think it a little unfortunate that we were not consulted; in fact I think it is unfortunate, having the scheme before us, we did not arrange to have a proper meeting, because, although you may appoint these gentlemen *pro tem.*, anything that is done by that Committee will have effect. The scheme says we shall be elected by this Council. I did not go myself to the last meeting, simply because I felt I had no right to be there, so that up to the present time this College has not been legally represented on the Committee. I think it very desirable that we should be so, and that that should be altered at once. I was told by the Secretary of the Farriers' Company that the scheme provides that there shall be three members of the Council, and suppose the inference to be the other three shall be selected from outside, if the Council think proper, and I dare say it would be competent to the profession outside this Council to find three eligible members to work with us. If it can be done, I think it is very desirable that we should to-day appoint six representatives to serve on the Registration Committee. The Council of the Royal Agricultural Society have shewn their appreciation of the scheme by nominating some of their best men, and it is desirable that we should co-operate with them, and in a legal and proper manner.

The PRESIDENT: I am very sorry indeed if I have made any mistake. I was led to understand the nomination would be acceptable.

Dr. FLEMING: I might mention I did not wish to stultify the action of our President at such an important meeting, and I attended, but against my own feelings. I think the members of the Committee should be able to work in harmony. The work is extremely important, and will be very heavy indeed. Therefore I think, if

there is any feeling amongst the gentlemen whom we send which is likely to mar the work, no good will result.

The PRESIDENT: I will work with anyone, and with all deference, I did not know there was the slightest feeling on the part of anyone connected with this Council, therefore I nominated the gentlemen I did. There was no feeling on my part.

Mr. KIDD: If we elect these six gentlemen to-day, will the election be legal, seeing it is not in the agenda?

The PRESIDENT: I am advised it will be perfectly legal.

Mr. ROALFE COX: I think it cannot be accepted that you have made a mistake. I do not see, under the circumstances of pressure that you could have done anything else but exercise your best discretion in acquiescing in the request made, that you would *pro tem.* mention the names of those whom you thought suitable for the office. I have no doubt what you have done is perfectly legal, and the best thing will be for those who have been nominated to be elected.

Sir HENRY SIMPSON: If the scheme says it must be done in a certain way it must be done in that way. I do not want to impute any blame to anyone, but I think it is quite within the bounds of possibility, at our last meeting to have had it on the agenda-paper to appoint the members of the Registration Committee, because we did not discuss the matter at the last quarterly meeting but at the special meeting previous to that. If I were in the House of Commons, I should put down notices to ask the Secretary why he did not put it on the agenda last time.

Mr. JAMES SIMPSON.—As you rule that we can proceed to the election of this Committee, I propose that we at once proceed to the election.

Mr. BARFORD: May I ask if it is the determination of Dr. Fleming not to act?

Mr. JAMES SIMPSON: I think those who know the course that events have taken in the last few months will probably understand Dr. Fleming's objection to serve upon the Committee with a gentleman, or perhaps two gentlemen—I do not know—who shall be nameless. That, I think, was the only reason.

Dr. FLEMING: That is it.

Mr. BARFORD: I shall propose that the six gentlemen you nominated be confirmed by this Council.

Mr. CARTLEDGE: I think each gentlemen should be nominated and balloted for separately. I do not think we can appoint half a dozen gentlemen wholesale. All our elections hitherto have been by ballot, and I do not think you can depart from that rule.

Dr. Fleming, Mr. Roalfe Cox, Sir Henry Simpson, Professor Axe, Mr. Wragg, Mr. Barford, Mr. Hunting, Mr. Broad, Mr. Stephens, and Mr. Cartledge were then nominated by various members of the Council.

The ballot being taken the following was the result:

Dr. Fleming	16
Sir Henry Simpson ...	14
Professor Axe	14
Mr. Roalfe Cox	12
Mr. Wragg	12
Mr. Barford	12

Sir HENRY SIMPSON: Might I ask if the Secretary may attend the meetings. I see that the Secretary of the Royal Agricultural Society is a member of the Committee, and I think it would be very desirable, if you consent to it, that our Secretary should be present to take minutes and so on.

Mr. ROALFE COX: I propose that a communication at once be made to the Worshipful Company of Farriers as to the result of the election, and also calling the attention of that gentleman to the fact that the nomination of temporary members by the President was only a matter of suggestion, and that it was necessary to have that confirmed. He would ask the Secretary of the Worshipful Company of Farriers to be so good as to direct notices to the members now elected, and to ask them to attend the meeting. He thought the correction ought to come from the Company of Farriers. He thought the Worshipful Company of Farriers should be asked to be so good as to direct the notices to these gentlemen, and to attend the next meeting. He thought the correction had better come from him.

Mr. JAMES SIMPSON: I will second that.

Sir FREDK. FITZ-WYGRAM: I think as we made the mistake about it we ought to take the trouble of notifying it to those gentlemen who were nominated *pro tem.*, but are not now elected.

Mr. COX: It merely occurred to me that the notification having come from the Secretary on the other side it would, perhaps, be undesirable that the correction should come from our Secretary.

Dr. FLEMING: I think it would be well to have our Secretary write to the Farriers Company, forwarding the list of members now elected, and stating that this is a definite list sanctioned by the Council. I would suggest that such a letter should be sent as quickly as possible. There is a meeting of the Committee on the last Monday of this month, and they give three days' notice, so that it will be necessary to do it at once.

The suggestion was agreed to.

EXTRACTS AND NOTES.

TUBERCULOSIS IN ANIMALS, AND ITS RELATION TO CONSUMPTION IN MAN.

(From Quarterly Journal of the Royal Agricultural Society).

During the past eight or ten years tuberculosis, or consumption, has received more attention than any other disease of either man or animals. The reason of this has been not only that the belief in its contagious nature was becoming more generally accepted, but the discovery by experiment that the disease in man and animals was the same, and inter-communicable from the one to the other. When this discovery was made, the question naturally arose how far the flesh and milk of tuberculous animals might prove injurious to man when used as food.

Thus, from being a medical or scientific question, the subject became as of much interest and importance to the stock-owner and others connected with the cattle trade, as to the sanitary, medical officers and the guardians of public health.

Prior to the discovery of the bacillus by Koch, tuberculosis was supposed to be due to various causes, among which may be mentioned climatic influences, defective nutrition, exposure to hardships, over-work, excessive secretion—in fact, any and every influence calculated to produce debility. Since Koch's discovery these alleged causes have been considered as only predisposing or preparing the structures of the body for the reception of the disease producing germs which are the true cause. Whatever may be the part played by debilitating influences in the production or progress of tuberculosis, Dr. Ransome has recently shown that, among people in communities where such influences are general and continuous, consumption is far more prevalent than in others where such influences are not at work, and he explains that debility, induced by whatever cause, apparently renders the body more susceptible to the invasion of disease-producing organisms and likewise prepares it as a suitable soil, so to speak, for their proper growth and multiplication.

Heredity has always been looked upon as a cause of tuberculosis, but this has, as already stated, been the result of practical observation rather than of scientific inquiry. It is difficult to say in what way heredity operates as a cause of disease. It may possibly be on the generally accepted principle that like produces like, and in this case the consumptive offspring of consumptive parents is only an example of a general natural law. On the other hand, direct infection may occur before birth : the tubercle bacillus may be transferred from the parent to the fœtus. Professor Johne, of Dresden, found in an eight-months' calf caseous nodules containing tubercle bacilli : it has also been said that the organism may be transferred to the ovum at the time of impregnation.

In connection with the question of the hereditary transmisson of tubercle, breeding in and in has long been accepted as an important factor ; but that view is no longer tenable in face of the evidence which can be furnished by well-known breeders of pedigree stock. Breeding in and in, so long as healthy stock are used, will never produce tuberculosis, but if tainted animals are used for the in-breeding, then the hereditary taint will be more and more intensified. Hence it is evident that the introduction of one tuberculous animal into a breeding herd may cause incalculable and almost irreparable mischief if not speedily discovered and the mistake corrected.

Until quite recently it was generally accepted, that of our domesticated animals cattle were the only victims of this disease, and, therefore, the only ones from which man might become affected through the use of their flesh as food ; but it is now known that fowls are more frequently attacked than any other animals. Experiments have shown that rabbits and guinea-pigs are also very susceptible. Pigs are not uncommonly affected, sheep and goats are occasionally attacked, and the malady now appears to be more common in the horse than was suspected only two or three years ago. Carnivorous animals are comparatively free from any tendency to tubercular infection, but, although the evidently enjoy a considerable amount of immunity, still, cases are not altogether unknown among dogs and cats.

It may be inferrred from what has already been stated that there is in many cases great difficulty in deciding whether an animal is the subject of tuberculosis or not. Animals—cattle in particular—may have tubercular deposits in their lungs and other organs, and still manifest all the appearances of perfect health. Butchers are now well aware of this, and in some legal proceedings instituted recently where tubercular carcases were seized and destroyed, the purchasers produced proof that they bought the cattle as sound animals, and paid a price which they would only have given on condition, or in the belief that they were healthy. They also showed that, as the beasts were in fine condition, they had no means of knowing that the disease existed until after slaughter, when the internal organs were examined and the carcasses seized. In other cases tuberculosis is marked by well-defined symptoms in its progress. These are, a cough which at first may not attract the owner's attention until the breathing becomes altered in character and laboured. Accompanying this cough there is always a general unthrifty appearance, gradual emaciation (wasting), and an irregular capricious appetite. There may sometimes be external manifestations of the disease visible, such as enlargement of the glands in the region of the throat, and, in the case of milch cows, hard nodular deposits may, in advanced cases, be found in the udder.

It has been suggested, to settle the question of existence of tubercle in any particular animal while alive, that the mucus from the bronchial tubes collected from the back of the throat should be examined microscopically for tubercle bacilli. Also that the milk of cows suspected should be similarly examined, more especially if any nodules could be felt in the udder. Such examinations, when they reveal the existence of the bacilli, are no doubt conclusive ; but in the majority of cases the abscence of the bacillus in the specimens examined cannot be taken as proof that the disease does not exist. Thus, to settle the question, a post-mortem examination is absolutely necessary, and before the inquiry is completed a microscopic examination of the diseased organs may also be required.

The extent to which tuberculosis prevails among cattle in this country is unknown, as no attempt has hitherto been made to obtain reliable statistics. In large towns where there are public slaughter-houses, a record is kept of all carcasses seized and condemned as unfit for human food ; but as every tuberculous carcass is not condemned the abattoir records are very imperfect even as regards the animals slaughtered there. In addition to this it must be borne in mind that in these slaughter-houses the meat is subject to inspection ; and it is only such animals as look healthy that are taken there. Animals, obviously tuberculous, wasters and piners, are disposed of in private slaughter-houses, where there is no inspection either of the carcass or of the internal organs. The meat, if firm and of good colour, is sent into a dead-meat market where it may be passed ; or if the carcass is not sufficiently good for the open market, it may be disposed of in other ways on private premises. It is, therefore, evident that in this country no reliable statistics as to the prevalence of tubercle in animals have ever been obtained.

In other countries it is much the same : thus, in Victoria, when the Tuberculosis Commission sat in 1884, the discrepant statements given in evidence before them by stock-owners and veterinary surgeons led them to continue their inquiry for another year, and obtain a return of all the tuberculous animals killed in the Melbourne Abattoirs. Although tney obtained the number of carcasses in which tubercle was found there, it could not be accepted as any indication of the extent to which the disease existed among the cattle throughout the colony. The statistics collected in other countries are open to the same objections. Being merely slaughter-house records, they do not represent the condition of animals throughout the whole of a country.

The question has often been asked, how far and to what extent is tuberculosis contagious ? Even at the present time, although the disease has been produced experimentally by inoculation, inhalation, and ingestion, many people do not believe in its contagious nature—at least not in the ordinary sense. In the case of small-pox, scarlet fever, and other transmissable diseases, with a short and definite period of incubation, the date of the exposure to the risk of infection is often known and remembered ; but in the case of a disease like tubercle, in which the earlier symptoms are not observed, or are ill-defined, and the progress is very slow, the time of exposure to infection cannot be so readily fixed. Many who admit that a man may catch small-pox, or scarlet fever, or an animal may take foot-and-mouth disease, from having been in contact with patients suffering from those affections, would laugh at the idea of either men or animals catching consumption.

Many cases are, however, recorded in the human subject, of consumptive patients infecting other people with whom they were in the habit of daily associating. It cannot be denied that such communication is possible ; but experience indicates that it does not happen very often. In consumption-hospitals the nurses are daily and constantly exposed to the risk of infection in this way : the tubercle-bacillus has been found abundantly in the air of the hospital wards ; but still, it is the exception to find the nurses fall victims to this

disease. It must be admitted, therefore, that the infective power of consumption in man is very low, and unless the person exposed is predisposed either by heredity, unhealthy surroundings, or other debilitating influences, the infection is resisted, because the organism is not introduced into a suitable soil for its growth and reproduction. Were it otherwise, consumption would no doubt have steadily increased, whereas it has of late years considerably decreased.

In a similar manner the infective power of tubercle in animals is very low. Practical men consider that the affection is not readily communicable from one animal to another, even when they are in close association, as in the case of cows in town dairies. It may happen that one or two animals in a herd may be affected with tubercle and gradually waste until the owner either kills them and buries the carcass, or sells the animal to the jobber for about the value of the hide. Yet no apprehension is felt with regard to the rest of the herd, such as there would be had an animal affected with pleuro-pneumonia been brought into it. It may be argued that the stock-owner's opinion as to the infectious nature of a disease is not of much value; but it must be admitted that any man of long experience can give the results of his own observation, and the evidence of practical men generally is to the effect that tubercle does not spread like other contageous diseases. An examination of cattle in a herd in which a tuberculous cow has been kept for many months, or even a couple of years, usually fails to detect any appearance of the disease in the animals associated with it. In cattle as well as in man the surrounding circumstances have often much to do with the extension of the disease.

The ingestion of tubercular matter by animals has proved the means of inducing the disease, and from this the question naturally arises whether the flesh or milk of all tuberculous animals should be condemned as dangerous and unfit for human food. There is great diversity of opinion on this point, for, while some maintain that the flesh and milk of all such animals should be destroyed, others hold that if the lesions are localised and confined to the lungs the meat and milk may be used without danger. It is true that the deposits of tubercle are seldom found in the meat, and the feeding experiments have proved that even in the advanced stages of the malady, when the milk proved infective to guinea-pigs and rabbits, the flesh in the raw state was harmless.

Meat is always cooked before being used as human food, and it has been demonstrated by Koch, Lingard, and others that a boiling temperature for a few minutes is sufficient to destroy the vitality and infective power of the bacillus; but milk is generally used as food without cooking, more especially in the case of children.

Tuberculous milk must therefore be looked upon as dangerous and likely to be the means of producing the disease in young or weakly subjects consuming it. The chief difficulty in determining whether the milk of any particular cow or cows is dangerous lies in the inability of the veterinary surgeon to say whether there are any tubercular deposits in the udder. Milk may contain these organisms and even a skilled bacteriologist fail to find them; their absence in a few drops which he examines is no guarantee that they may not exist. Recent experiments in America have demonstrated that where tuberculous cows showed no signs of the disease in the udder their milk proved infective to rabbits and guinea-pigs fed with it. The results of the feeding experiments all tend to prove that the milk from tuberculous cows, if given to animals in the uncooked state, possesses a very much higher infective power than the flesh.

The question whether legislation for this disease in Great Britain is necessary, and if so, what form it should take, has recently given rise to much discussion.

Legislation for tuberculosis must be considered from two different points of view:

1. In the interest of the public health, restricting or prohibiting the use of tuberculous meat and milk as human food.

2. Dealing with it as a contagious disease of animals, and adopting suppressive measures to question it from the country.

In dealing with the first part of the question it would be necessary for the Government to lay down some fixed, clear, and definite code of instructions for the guidance of sanitary authorities and meat inspectors. Until, however, the members of the medical and veterinary professions hold more uniform opinions as to passing or condemning the flesh of tuberculous animals, it is not likely that such instructions will be drawn up. In a recent trial at Glasgow, arising out of the seizure by the sanitary inspector of some carcasses of cattle affected with tubercle, medical officers of health and veterinary surgeons gave evidence and expressed directly opposite views as to whether the carcasses in question were fit for human food or not. While such conflicting opinions are held by different professional men, there can be no uniformity of action. The result would be that meat which would be condemned in one place might be passed in another, and the bulk of the doubtful-looking meat would be sent where the inspection was least rigid.

Another difficulty in the way of obtaining uniformity of action in dealing with tuberculous meat is, that in this country we have very few public abattoirs where efficient inspection can be carried out. A large proportion of the meat consumed is killed and dressed in private slaughter-houses, or imported, and sent into the large wholesale meat markets. The carcass of an animal in the earlier stages of tuberculosis would when dressed probably show no signs of the disease, and would therefore be passed as dead meat, whereas if the inspector had seen the condition of the internal organs he might have hesitated to pass it or even condemned it.

In connection with the question of the use of tuberculous meat and milk, the United Association of Municipal Corporations a few years ago sent out a series of questions to medical officers soliciting replies giving their opinions as to the infectiveness of such meat. The Association obtained very conflicting evidence. While some considered it highly dangerous others did not, and many gave no opinion at all. The Association also referred the subject to their Law Committee, who expressed the opinion that under Sections 116 and 117 of the Public Health Act of 1875, Health Officers and Sanitary Inspectors had sufficient power to seize and deal with tuberculous meat; but they considered it desirable that tuberculosis should be included as a contagious disease of animals, chiefly with the object of enabling Sanitary Authorities to deal with tuberculous cows kept in dairies for the production of milk sold to the public.

Considerable excitement and alarm have recently been created in the meat trade by the action of some Local Authorities in confiscating the carcasses of animals as tuberculous and unfit for human food, where no suspicion of the disease existed while the animal was alive, and the butcher had paid a fair market-price, for which he supposed he was buying a healthy animal. At the present time there is no provision by which the butcher can be recouped for such losses, and in at least two actions brought against the sellers recently, the legal decision was against the butcher on the plea that no warranty was given.

It would be an exceedingly difficult matter to arrange for compensation to the butcher in such cases. It might be argued that, as these tuberculous carcasses are condemned and destroyed in the interests of the public health, the ratepayers of the district in which they are seized should pay; but

this would naturally lead to such animals or carcasses being sent to the districts in which the compensation was awarded on the most liberal scale. On the other hand it has been suggested that the seller of the animal—and that would mean the farmer or stock-owner from whose premises it had originally come—should bear a part, if not the whole, of the loss. Were this to be adopted it would imply a complete reform and reorganization of the cattle trade. In many cases it would be utterly impossible to trace the animal back to the farm from which it came; and even if it were traced, would the farmer who had kept it and fed it, for say three months, sustain the loss, and the breeder or dealer who sold it to him escape?

On the Continent—in Denmark, for example—the butchers have a kind of mutual assurance association in which every animal has to be insured before it is killed, and from which compensation—partial or total—is paid if the animal when killed is found by the inspector to be diseased. It has been suggested that something of the same kind should be done in this country, part of the fund to be supplied from the Treasury.

With regard to the question of the milk from tuberculous cows, the great difficulty lies in not being able to determine with any degree of certainty whether any particular cow is tuberculous. Even if that could be settled, there is the further question whether the milk contains the tubercle bacillus and is infective or not. If greater powers were conferred on Health Officers and Sanitary Inspectors in dealing with cows in dairies, more especially with such as might from their emaciated condition be suspected of being tuberculous, they would no doubt have the effect of getting rid of such animals from all dairies and cowsheds regularly and efficiently inspected.

Such powers, if granted, might be exercised in a very arbitrary and very oppressive manner. While the cowkeeper in large towns would be under strict supervision as to the health of his stock, the dairy farmer in rural districts, who sends his milk into towns for sale many miles off, would not be subject to such surveillance, unless powers were conferred on health officers where the milk is sold enabling them to enter premises in the district of other local authorities and inspect the cattle. Such powers are not likely to be granted, and, even if they were, unless supplemented with power to deal with suspected animals in the district of another local authority, they would be comparatively useless.

The difficulties in the way of legislation for tuberculosis in the living animal are sufficiently obvious to cause considerable hesitation in dealing with this side of the question. They are chiefly, as expressed by Professor Brown in the report above referred to, the difficulty of diagnosing the existence of the disease and distinguishing it from others resembling it, and the question of compensation. In France, the only country in which it is treated as a disease of animals, there is no compulsary slaughter, and therefore no compensation. The tuberculous animal is isolated and placed under restrictions so that it can only be moved to a slaughter-house, and, when slaughtered, if the meat is considered unfit for human food it is destroyed and the owner may utilise the skin after disinfection by the inspector.

If legislation for tuberculosis in the living animal is adopted, the orders and regulations applicable to home-bred stock would have to be strictly enforced with regard to imported animals. It has already been shown how difficult the diagnosis of this disease is, and it would be throwing an undue responsibility on inspectors at the ports, where foreign animals not subject to slaughter are landed, where they expected to detect all cases of tubercle in the short time they have for the examination.

Under these circumstances, if legislation for tuberculosis is carried out in home-bred stock, it will be absolutely necessary to prohibit the importation of cattle except for slaughter, because the disease is known to exist in the countries from which cattle are at present imported into this country.

Until some solution is arrived at in connection with the question of tuberculous meat and milk being used as food, there seems little probability that anything will be done as regards the disease in the living animal.

W. Duguid.

THE SCOTTISH SOCIETY FOR THE PREVENTION OF CRUELTY TO ANIMALS *v.* ANDREW GRAY.

In the Court of Session, Edinburgh, judgment was given in this reclaiming note, which brought under review a decision of Lord Kincairney in the action by Andrew Gray, stable manager to Messrs. Croall and Sons, Edinburgh, against the Scottish Society for the Prevention of Cruelty to Animals, for £500 damages for alleged slander. The pursuer was prosecuted last year by the Procurator-Fiscal at the instance of the Society, he having as was alleged, sent out a horse suffering from sores under the collar. The Magistrate found the charge not proven. The pursuer's agent had some correspondence with the Society's secretary with regard to his claim for the payment of his expenses by the Society; and the correspondence was published in the *Scotsman*, along with a letter by the pursuer, in which he alleged that the Society, from an excessive zeal, had taken up an unfounded charge. In reply to this letter, the secretary of the Society wrote to the *Scotsman* a letter, which was published, narrating the circumstances of the case, and pointing out the facts upon which the Society founded their information to the Procurator-Fiscal. The pursuer now alleged that this letter, and a subsequent advertisement inserted by the defenders in the *Scotsman* with reference to the case, were slanderous, in respect that they represented that he was guilty of an offence within the meaning of the Act, and that though he was tried for that offence the charge was nevertheless, well founded. In defence the Society maintained that the letter and the advertisement were privileged. In the Outer House Lord Kincairney allowed issues, thinking the question one for a jury, and the defenders reclaimed.

The Court to-day, following the opinion of Lord Adam, recalled the interlocutor of the Lord Ordinary, and dismissed the action with expenses, holding that the defenders were quite entitled to state in the letter complained of the facts which justified them in laying the case before the Procurator-Fiscal

Lord Shand said he regarded that case as of con-

siderable importance. The pursuer having written the letter he did, complaining of the conduct of the Society, put the Society in this position—that they were quite entitled to express their opinion that the charge of cruelty had been made out although the Magistrate thought different. They had trials of great importance occurring every day—trials for serious crime, divorce cases, and cases involving fraud and the like—and he had never heard it questioned that legitimate criticism upon the result of these trials was quite lawful on the part either of individuals or of newspapers; and he was not aware, and did not think, that persons who said they differed from the verdict of a jury, or criticised the charge of a Judge, and said that in their opinion there had been a miscarriage of justice, and that there ought to have been a verdict of guilty where there was one of not guilty, thereby rendered themselves liable for a claim of damages. He thought that was fairly a matter of public criticism; and he thought it would be unfortunate if individuals or the press were limited in dealing with matters of that kind. Apart from that he found that letter contained nothing but a statement of facts upon which the Society acted when they gave that information to the Procurator-Fiscal, and these facts were not denied.

Their Lordships concurred.

Scotsman, July 19th, 1890.

The Scotch Dishorning Case.

It will be remembered that in the month of February last an important case of dishorning cattle was heard before Sheriff-Substitute Shirreff at Haddington. The case was at the instance of the Crown against Mr. Wilson, for having dishorned some cattle in the end of last year at a farm near North Berwick.

After hearing the evidence of leading authorities, and the pleadings of counsel for and against the practice, Sheriff Shirreff found the defender not guilty, and dismissed the case. The case was appealed to the Higher Court, and accordingly came on for hearing on Monday, before the Lord-Justice Clerk, and Lords M'Laren, Lee, Trayner, Wellwood, and Kyllachy.

No progress, however, was made with the case. The counsel for the prosecution read over the findings of the Sheriff, which apparently were not quite to the mind of the judges. As the judges in an Appeal Court cannot hear any of the evidence given in a lower court beyond hearing counsel, they are entirely restricted to the findings of the Sheriff for their guidance. And when the Sheriff's findings in this case were read over, it was found that he had not given a finding as to whether dishorning was necessary or even highly expedient. Their lordships, after consultation, intimated that they had agreed to remit the case to the Sheriff, in order that he might state his findings as to whether the object aimed at in total dishorning could not be obtained by partial dishorning, and whether it was impossible to feed cattle in open courts without dishorning.

CORRESPONDENCE.

We shall be obliged by early intelligence of all matters worth bringing under the notice of the profession, and thankful to any friends who may send us cuttings from local papers, containing facts of interest.

IS CRIB-BITING UNSOUNDNESS?

Dear Sir,—Can you tell me of any recent law cases in which it has been decided that "crib-biting" constitutes unsoundness in the horse? About fifty years ago it was laid down that crib-biting was not an unsoundness; but I should be greatly obliged if you could tell me where to find a record of any later legal decisions on the point.

Yours respectfully, EQUUS.

UNTRAINED ASSISTANTS.

Sir,—Your correspondent, "One of them," condemns me for stating what he admits to be true, namely, that "College career does not sufficiently fit one for a country practice." If he will kindly read my letter again he will not hold me responsible for the condition in which I receive pupils, nor would he expect me to make silk purses out of sows' ears. I do not profess to have found out how to make a delicate operator in three or four days of a coarse-fisted seaman, whose horny hands have become deformed by years of manual toil "in front of the stick." What I complained of was, that young members are wanting in *common knowledge*, which clients quickly enough observe, while they have no means of gauging the scientific attainments which are undoubtedly possessed. If the pressure of subjects is so great that a practical knowledge of domesticated animals and their environments cannot be given, I hold that it would be the lesser evil to be unacquainted with the latest bacteriological theory.

So far from despising the microscope, I have reason to be grateful to it for many hours of delighfult study and many pounds sterling for specimens supplied to dealers, and possibly purchased by your youthful correspondents. Those young fellows who despise country practice overlook the fact that is brings spells of leisure and a greater variety of pathological specimens than can be met with in town businesses.

I have to apologise to your correspondents for having fallen into the error of supposing that if they deemed my letter worthy of reply they would have addressed themselves to the *subject*, and not waste your space by expressions of contempt for me and all my works, which cannot be of any interest to the profession.

HAROLD LEENEY.

DISHORNING OF CATTLE.

Sir—I observe in your issue of the 19th inst. that Mr. Greaves, in his zeal as a new convert—probably the latest—to the cruel practice of dishorning full-grown cattle, has favoured you with a dissertation on this subject, and I regret very much that I do not at present feel at liberty to deal with his remarks, in the face of the fact that the appeals in the Scotch and Irish cases respectively are still pending. When these are settled, I shall not fail to take advantage of the opening Mr. Greaves has afforded me of discussing—with your permission—the subject fully in your columns.

Yours faithfully, THOMAS WALLEY.

Royal (Dick's) Veterinary College, Edinburgh,
July 22nd, 1890.